1/2   013   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--ON CORRELATION OF CLOUDINESS WITH TEMPERATURE AND HUMIDITY -U-

AUTHOR-(03)-VOYOVA, K.V., KOLESNIKOVA, V.N., MONIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 5, PP 53-58

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--CLIMATE, ATMOSPHERIC TEMPERATURE, ATMOSPHERIC HUMIDITY,
ATMOSPHERIC CLOUD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0090   STEP NO--UR/0050/70/000/005/0053/0058

CIRC ACCESSION NO--AP0132383
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0132383
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPORTANCE OF STUDYING CLIMATE
CORRELATIONS IS EXPLAINED. INFORMATION ON CORRELATION OF CLOUDINESS
WITH TEMPERATURE AND HUMIDITY FOR DIFFERENT CLIMATIC REGIONS OF THE
SOVIET UNION IS GIVEN. THE CONCLUSION IS MADE ON THE NECESSITY OF
ACCOUNTING SUCH CORRELATIONS WHEN COMPUTING NON LINEAR CLIMATE
CHARACTERISTICS.   FACILITY: INSTITUT OKEANOLOGII AN SSSR.

UNCLASSIFIED

1/2   024   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--DIFFUSE REFLECTION AND TRANSMISSION OF LIGHT BY A PLANETARY
 ATMOSPHERE FOR A THREE MEMBERED SCATTERING CHARACTERISTIC -U-
AUTHOR-(02)-KOLESOV, A.K., SMOKTIY, O.I.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 2, 1970, P. 397-406

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--PLANETARY ATMOSPHERE, LIGHT TRANSMISSION, LIGHT REFLECTION,
 LIGHT SCATTERING, ALBEDO

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1/57   STEP NO--UR/0033/70/047/002/0397/0406

CIRC ACCESSION NO--AP0125373
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0125373
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   APPLICATION OF SOBOLEV'S, (1968,
1969) RIGOROUS THEORY OF ANISOTROPIC SCATTERING OF LIGHT TO THE SOLUTION
OF THE PROBLEM OF DIFFUSE REFLECTION AND TRANSMISSION OF LIGHT BY A
PLANETARY ATMOSPHERE.   THE ANALYSIS IS PERFORMED FOR A THREE MEMBERED
SCATTERING CHARACTERISTIC. EXACT FORMULAS FOR THE TRANSMITTANCE AND
REFLECTANCE (FOR AN ARBITRARY PARTICLE ALBEDO) ARE DERIVED, TOGETHER
WITH FORMULAS FOR THE ALBEDO OF A PLANETARY ATMOSPHERE, THE SPHERICAL
ALBEDO, AND THE ILLUMINATION OF THE PLANETARY SURFACE.   FACILITY:
LENINGRADSKII GOSUDARSTVENNYI UNIVERSITET, LENINGRAD, USSR.

UNCLASSIFIED

12371   CORROSION AND ELECTROCHEMICAL BEHAVIOR OF CARBON STEELS UNDER CONDITIONS SIMILAR TO THOSE IN REACTOR OPERATION. Gerasimov, V. V.; Gromova, A. I.; Lupakov, I. S.; Morozova, I. K.; Bakulevskii, A. A.; Belous, V. N.; Kolesov, B. I. At. Energ. (USSR); 28: 13-18(Jan 1970). (In Russian).

The corrosion and electrochemical behavior of carbon steels was studied in water at 300°C with oxygen concentrations equal to 0.02 to 40 and 1000 ppM. The samples of carbon steels, irradiated in the reactor and non-irradiated samples were tested under static and dynamic conditions. The increase of oxygen concentration in water intensified corrosion of carbon steels. Irradiation reduced steel corrosion resistance during the initial test period. (auth)

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18

REEL/FRAME
19760028

USSR   UDC 621.039.553.36:620.193.47.4

GERASIMOV, V. V., GROMOVA, A. I., LUPAKOV, I. S., MOROZOVA, I. K.,
BAKULEVSKIY, A. A., BELOUS, V. N., and KOLESOV, B. I.

"Corrosion and Electrochemical Behavior of Carbon Steels Under Quasi-
reactor Conditions"

Moscow, Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 13-18

Abstract: The article describes results of a study of the corrosion
and electrochemical behavior of steels of the perlitic class in wa-
ter at 300° C at various oxygen concentrations (0.02-40 and 1000 mg/
kg) at pH = 7-10, as well as a study of the effect of reactor irradi-
ation on the corrosion processes of perlitic steels. The corrosion
and electrochemical tests were staged under static and dynamic condi-
tions. The perlitic steels studied included St. 20 (C 0.17%; Cr
0.25%; Ni 0.25%; Mn 0.35%; Si 0.17%); 12KhM (C 0.12%; Cr 0.94%; Mn
0.59%; Si 0.3%; Mo 0.4%); and 16GNM (C 0.18%; Ni 1.41%; Mn 1.18%; Si
0.23%; Mo 0.26%). Specimens of stainless steel Kh18N10T (C 0.08%; Cr
17±19%; Ni 9÷11%; Mn 1.2%; Si 0.8%; Ti 0.6%) were comparison-tested.

1/2

USSR

GERASIMOV, V. V., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 13-18

It was found that in demineralized water at 300° C an increase in the oxygen concentration from 0.02 to 40 mg/l increases the corrosion rate of perlitic steels, with pitting corrosion developing with a pit depth of up to 0.1 mm. In oxygen-containing water under static conditions a complex dependence of anodic process rate on potential is observed in steels of the perlitic class. In demineralized deaerated water an increase in the pH to 10 (by introducing ammonia) results in a decrease in the corrosion rate, with no development of pitting corrosion being observed. Irradiation reduces the corrosion resistance of the steels during the initial testing period. The corrosion rate under irradiation decreases with an increase in exposure time, and after 3500 hours of tests the corrosion rate for the perlitic steels is practically the same with or without irradiation.

2/2

1/2   047   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--RADIATION STABILITY OF ZNS PLUS PRIME10 B TYPE DETECTORS TO
   NEUTRONS -U-
AUTHOR-(04)-GANICHEV, G.I., KOLESOV, B.M., OVCHINNIKOV, A.K., TIMOFEYEVA,
   T.V.
COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, (2), 78-80

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--ZINC SULFIDE, BORON ISOTOPE, NEUTRON DETECTOR, SCINTILLATOR,
   RADIATION EFFECT, LIGHT EMISSION, RADIATION INTENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1077   STEP NO--UR/0120/70/000/002/0078/0080

CIRC ACCESSION NO--AP0136497
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0136497
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LOWERING WAS STUDIED OF THE
LIGHT OUTPUT OF ZNS PLUS PRIME10 B DETECTORS OWING TO RADIATION FAULTS
CAUSED BY THERMAL N. AT DOSAGES ALRGER THAN 10 PRIME12 N-CM PRIME2 THE
REDN. OF THE LIGHT OUTPUT IS SIGNIFICANT.   FACILITY: VNII
RAZVED. GEOFIZ., LEINIGRAD, USSR.

UNCLASSIFIED

ADAMCHUK, V.G., KOLESOV, L.N. [Deceased]

"Calculation Of Transistor Structures Of Integrated Circuits"

Abstract: During calculation of the electrical parameters of transistors problems
originate connected with a determination of the actual distribution of impurities
in the structure. It is necessary for this to take into account two of the most
important factors: 1) Distribution of the impurity in the diffusion layers de-
pends upon a multistage thermal process; and 2) By virtue of the concentration
dependence of the diffusion coefficient, distribution of an impurity with a con-
centration above 10^{19} cm^{-3} does not confirm with the distribution which is des-
cribed by a supplementary function of the errors. In the present paper consider-
ation of these factors is accomplished by use of an analytical model of a multi-
stage diffusion and the effective diffusion coefficient, i.e., calculated by the
change of the values of the surface concentrations and the depth of occurrence
of the junctions. The paper uses as analytical model employed in a previous work
[V.M. Adamchuk, et al., Izv.VUZ:Radioelektronika, 1969, 12, No 7] for calculation
of the distribution of the impurity in diffusion layers, and as the basis of

1/2

a method of technological calculation of transistor structures. An algorithm of the technological structures formed by four-stage diffusion is presented. A method is shown of finding the optimum connection between the electrical and technological parameters with a minimum extent of the iteration calculations. All calculations in the stdy were conducted with the help of an electronic computer. 1 fig. 1 tab. 1 ref. Received by editors, 14 June 1971.

2/2

USSR UDC 621.396.6-181.5

KOLESOV, L. N. (deceased)

"Principles Which Govern the Process of Designing Integrated Circuits"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1330-1339

Abstract: The author considers the basic stages in design of integrated circuits: the initial and final stages of design, the sequence of stages in design, the principles of models and modeling of integrated circuits, optimization and transformation of models, and synthesis of a topological model. Six figures, bibliography of sixteen titles.

1/1

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USSR   UDC 621.396.6-181.5

KOLESOV, L. N.

"Some Problems of Synthesizing Technological Processes for Manufacturing Integrated Circuits"

Kiev, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Radioelektronika, Vol XIV, No 2, 1971, pp 123-134

Abstract: When manufacturing integrated circuits, certain components and sections can be formed using various types of technological operations the number of which is increasing. Thus, the number of versions of the flow chart for the technological process can be so large that the optimal one cannot be selected by simple sorting or even by computers. Accordingly, the so-called step method of synthesizing the flow chart with respect to complexity levels is of interest. This method permits optimization of the technological process at each step of its synthesis. Some problems of the indicated method are discussed here. Practical adoption of matrix synthesis of the indicated flow charts is proposed, and operator models are presented.

1/1

USSR   UDC 611.831.1:611.1].061

KOLESOV, M. A., Chair of Normal Anatomy, Grodno State Medical Institute

"Effects of Acute and Chronic Hypoxia on the Architecture of the Cerebrocorti-
cal Blood Vessels"

Abstract: Cats were subjected to hypoxia in a pressure chamber for 1 hour, 30
and 150 days (4 to 5 hours daily). Rats were kept in the pressure chamber for
90 days (4 to 5 hours daily). Examination of brain sections from decapitated
cats revealed a dilatation of the cerebral arteries and capillaries, slight
contraction of the veins, and a denser capillary network than the control.
These morphological changes were transient after acute hypoxia but more stable
and longer-lasting after chronic hypoxia due to impairment of the structure of
the arterial walls. The cortex of cats exposed to hypoxia for 150 days con-
tained numerous arterial and arteriovenous anastomoses between the lateral
branches of the arteries and veins. The rats exhibited the same changes as
the cats exposed to hypoxia for the same length of time (90 days). It is
pointed out that the vascular changes observed are not specific to the brain,
for they occur in many viscera and skeletal muscles.
1/1

USSR

DANILOV, V. V., KOLESOV, N. V.

"Reliability Synthesis of an Automaton with Detection of a Single Failure"

Translation: The problem of reliability synthesis of the logic convertor of an automaton is studied. It is assumed that individual defects are detected by means of the automaton being tested.

1/1

- 38 -

TITLE--INFLUENCE OF GLOBULAR ORGANIZATION ON THE ELECTRICAL STRENGTH OF
   POLYSTYRENE -U-
AUTHOR-(03)-KOLESOV, S.N., BALABAN, N.P., KHERASKOV, L.N.

COUNTRY OF INFO--USSR

SOURCE--VVSKOMOL. SOEDIN., SER. B 1970, 12(5), 366-B

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--POLYSTYRENE RESIN, PLASTIC FILM, ELECTRIC FIELD, ELECTRIC
   PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1332   STEP NO--UR/0460/70/012/005/0366/0368

CIRC ACCESSION NO--AP0138342
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0138342
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYSTYRENE FILMS, FORMED BY THE
EVAPN. OF ITS SOLNS. IN O,XYLENE HAVE MORE REGULAR AND FINER GLOBULAR
STRUCTURE THAN FILMS FROM CCL SUB4 SOLNS. THE FORMER FILMS HAVE 460
KV-MM ELEC. FIELD STRENGTH; THE LATTER, 260 KV-MM.   FACILITY:
TASHKENT. ELEKTROTEKH. INST. SVYAZI, TASHKENT, USSR.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70

TITLE--ELECTRICAL STRENGTH OF VARIOUS MICROPARTICLES OF POLYPROPYLENE
FILMS -U-

AUTHOR-(02)-KOLESOV, S.N., KHERASKOV, L.N.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 266-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PLASTIC FILM, DIELECTRIC STRENGTH, POLYPROPYLENE/(U)PP5
POLYPROPYLENE FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1243   STEP NO--UR/0460/70/012/004/0266/0268

CIRC ACCESSION NO--AP0134917
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0134917
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HIGHEST BREAKDOWN POTENTIAL (E
SUBB) IN POLYPROPYLENE PP-5 (78PERCENT CRYSTALLINITY) WAS OBSD. IN THE
CENTRAL REGION OF THE SPHERULITES, WHERAS MIN. E SUBB WAS MEASURED IN
THE INTERSPHERULITE SPACE. THUS, BREAKDOWN OF POLYMER FILMS WAS
PRIMARILY DUE TO THE INTERSPHERULITE SPACE WHICH HAD A LESS DENSE
STRUCTURE.   FACILITY: TASHKENT. ELEKTROTEKH. INST. SVYAZI,
TASHKENT, USSR.

UNCLASSIFIED

APO 024231

·UR 0533

AUTHOR--   KOLESOV

TITLE--   DESIGNERS OF BATTLES

NEWSPAPER--   SOTSIALISTICHESKAYA INDUSTRIYA, FEBRUARY 22, 1970,
              P 4, COLS 1-4

ABSTRACT--   THE AUTHOR DESCRIBES HIS VISIT TO THE ELECTRONIC
COMPUTERS LABORATORY OF THE MILITARY ENGINEERING ACADEMY KUYBYSHEV
WHERE HE MET MAJOR BORIS NIKOLAYEVICH YURKOV, 34, DOCTOR OF
TECHNICAL SCIENCES.

DURING THE SOVIET REGIME, THE ACADEMY GRADUATED MORE THAN 15,000
EXPERTS WHO ARE SKILLED IN BUILDING FORTIFICATIONS, AIRPORTS, AND
BRIDGES. AS MILITARY ENGINEERS, THEY ARE RESPONSIBLE FOR WATER
SUPPLY AND CAMOUFLAGE. THEY ALSO DEVELOP TOPOGRAPHY MAPS AND
INTERPRET AERIAL MAPS.

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19650901   4

AP0024231

MAJOR YURKOV IS OF THE OPINION THAT MODERN COMBAT IS UNTHINKABLE WITHOUT ELECTRONIC COMPUTERS.

A PHOTOGRAPH IS GIVEN WHICH SHOWS ENGINEER-LIEUTENANT-COLONEL A. SENYUKOV, ENGINEER-MAJOR I. SHAPKIN, AND ENGINEER-MAJOR B. YURKOV DISCUSSING THE COMPUTERIZED SOLUTION OF A MILITARY PROBLEM IN THE COMPUTER LABORATORY.

19650902

1/2   022   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--EXPERIMENTAL REPLACEMENT OF RENAL ARTERIES WITH FREE ARTERIAL
   AUTOGRAFT -U-
AUTHOR-(02)-KOLESOV, V.I., MIKHAYLOVA, N.M.

COUNTRY OF INFO--USSR

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP
 51-55
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--KIDNEY, BLOOD VESSEL, TISSUE TRANSPLANT, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0640   STEP NO--UR/0481/70/000/002/0051/0055

CIRC ACCESSION NO--AP0108851
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0108851
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEPICTS THE TECHNIQUE
   AND RESULTS OF EXPERIMENTS INVOLVING REPLACEMENT OF RENAL ARTERIES WITH
   FREE ARTERIAL AUTOGRAFT. IN 15 DOGS THE TRANSPLATED ARTERY TOOK AND
   REMAINED PATENT, AND THE KIDNEY FUNCTION WAS COMPLETELY PRESERVED. THE
   AUTHORS CONSIDER FREE ARTERIAL AUTOPLASTY AS THE BEST METHOD OF
   REPLACING CHANGED AREAS OF VITAL ARTERIES OF SMALL DIAMETER.
   FACILITY: FAKUL'TETSKAYA KHIRURGICHESKAYA KLINIKA AND N-I LABORATORIYA
   I LENINGRADSKOGO MEDITSINSKOGO INSTITUTA IM. I. P. PAVLOVA.

UNCLASSIFIED

TITLE--STANDARD ENTHALPY OF VINYL FLUORIDE FORMATICN -U-

AUTHOR-(02)-KOLESOV, V.P., PAPINA, T.S.

CCUNTRY CF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1101-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ENTHALPY, ORGANIC SYNTHESIS, FLUORINATED ORGANIC COMPOUND, VINYL COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1968   STEP NO--UR/0057/70/044/004/1101/1103

CIRC ACCESSION NO--AP0132229
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0132229
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CALORIMETRICALLY DETD.
ENTHALPY OF COMBUSTION OF CH SUB2:CHF IS MINUS 300.2 PLUS OR MINUS 0.4
KCAL-MOLE. THE STD. ENTHALPY OF FORMATION OF CH SUB2:CHF (G) IS MINUS
32.4 PLUS OR MINUS KCAL-MOLE.   FACILITY: KHIM. FAK., MOSK. GOS.
UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR   UDC 666.1/.2.074.4

NAGULEVICH, K. V., SMIRNOV, I. K., and KOLESOV, Yu. I.

"Installations for the Determination of the Gas Content in Glass"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 1, 1973, pp 108-110

Abstract: A method and the installation for the analysis of dissolved gases in glass are reported which are free from deficiencies of the at first discussed vacuum smelting method. The installation and the extractor are described by reference to schemata. The extraction of water, carbon dioxide, sulfur dioxide, oxygen, and nitrogen is discussed. The ending gas extraction was determined visually and from the reading of LT-2 lamp, the total gas volume was resolved from the sum of constituent components. Three figures.

1/1

Industrial

USSR

UDC 666.189.212:666.11.016.2

KOLESOV, Yu. I., Candidate of Technical Sciences, and KOLESOVA, A. I., Engineer, All-Union Scientific Research Institute of Glass Plastics and Glass Fibers

"Alkaline Glass for the Production of Continuous Glass Fiber"

Abstract: Studies were made at the All-Union Scientific Research Institute of Glass Plastics and Glass Fibers with a view to develop an alkaline composition of glass providing a similar efficiency of fiber production as aluminoborosilicate glass. As a result of investigations of viscosity and crystallization ability of boiled glasses, a glass composition No 7A was selected which, in comparison with the former production No 7, secures a 30 oC reduction of the upper crystallization limit and a displacement of the working interval of fiber production into a zone of more high temperatures. The improved composition of No 7A glass and its boiling method provide a high production technology of glass pellets and glass fiber with sufficiently high physico-chemical and mechanical properties. Two figures, two tables, four bibliographic references. 1/1

USSR

UDC 666.189.211

KOLESOV, YU. I., MALASHKINA, T. G., and PLATONOV, R. I., All-Union Scientific-Research Institute of Glass Plastics and Glass Fibers

"The Effect of Certain Technological Factors on the Degree of Volatilization of B2O3 in the Melting of Non-Alkaline Alumoborosilicate Glass for the Production of Fiberglass"

Moscow, Steklo i Keramika, No 5, May 70, pp 19-22

Abstract: The volatility of B_2O_3 was studied during melting of alumoborosilicate glass E in three types of vat ovens: regenerative, recuperative, and direct heat gas-electric oven. It was determined that maximum volatilization of B_2O_3 -- 70-90% -- is observed at the stage of the vitrification of the furnace charge. In the gas-electric oven the loss of B_2O_3 in the light zone is several-fold higher than in gas ovens. To lower the losses of B_2O_3 it is proposed that the period of glass formation be shortened by increasing the temperature at the point of the furnace charge loading and that boron anhydride be added to the furnace charge in the form of calcium boride. The increase in the mass exchange between the depth and surface layers of the glass forming material in the oven results in higher losses of B_2O_3.

1/1

TITLE--AUTOMATIC DIFFERENTIAL MICROCALORIMETERS -U-

AUTHOR-(03)-GALPERIN, L.N., KOLESOV, YU.R., ZELENOV, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 525-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CALORIMETER, HEAT LOSS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2249   STEP NO--UR/0076/70/044/002/0525/0527

CIRC ACCESSION NO--AP0125827
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0125827
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIVICES ARE OPERATED ON THE
BASIS OF CONST. RECORDING OF THE HEAT EVOLVED AS WELL AS OF THE RATE OF
ITS EVOLUTION.   THE MAX. RATES OF THE LIBERATED HEAT WERE 1, 5, 10, AND
50 CAL-HR.   THE DETN. ERROR OF THE HEAT LIBERATED (5 CAL-HR) IS
4-2.5PERCENT.   THE TIME CONST. IS 35-55 SEC.   FACILITY: FILIAL
INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

USSR   UDC 517.917

KOLESOV, Yu. S., Voronezh

"Periodic Solutions of Relay Systems With Distributed Parameters"

Moscow, Matematicheskiy Sbornik, No. 11, Nov 70, pp. 349-371

Abstract: One class of relay systems with distributed parameters is
studied to determine the existence, number, and stability of periodic
solutions. This class of equations contains equations arising in de-
scribing certain electromechanical processes such as natural oscillations
in electrolytic systems free from passivation and in the mathematical
description of nonstationary processes of the fountain effect of Wells
and the relay control of the temperature of the body. The following
boundary value problem is considered:

$$\frac{\partial u}{\partial t} + Au = \begin{cases} f_1(x) \\ f_2(x) \end{cases} \quad (x \in \Omega), \qquad (1)$$

$$Bu = \begin{cases} \varphi_1(x) \\ \varphi_2(x) \end{cases} \quad (x \in \Gamma), \qquad (2)$$

$$l(u_1) > d_1 > d_2 > l(u_2). \qquad (3)$$

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USSR

KOLESOV, Yu. S., Matematicheskiy Sbornik, No 11, Nov 70, pp 349-371

Here Ω is a bounded open region of an n-dimensional space of R^n points $(x = x_1,\ldots,x_n)$ and Γ is the sufficiently smooth boundary of the region Ω. $f_1(x)$, $f_2(x)$, $\phi_1(x)$, $\phi_2(x)$ are certain sufficiently smooth functions; l is a continuous linear function in $C(\Omega)$ denotes the Banach space of functions continuous in $\bar{\Omega} = \Omega + \Gamma$. d_1 and d_2 are fixed numbers and $v_1 = v_1(x)$ and $v_2 = v_2(x)$ are stationary solutions of certain boundary value problems. It is shown that the boundary value problem (1)-(3) has at least one stable periodic solution with two switchings and that the time between switchings rises without limit as the difference $d_1 - d_2 - l(v)$ tends toward zero.

2/2

Industrial

USSR   UDC 666.189.212:666.11.016.2

KOLESOV, Yu. I., Candidate of Technical Sciences, and KOLESOVA,
A. I., Engineer, All-Union Scientific Research Institute of
Glass Plastics and Glass Fibers

"Alkaline Glass for the Production of Continuous Glass Fiber"

Abstract: Studies were made at the All-Union Scientific Research
Institute of Glass Plastics and Glass Fibers with a view to de-
velop an alkaline composition of glass providing a similar effi-
ciency of fiber production as aluminoborosilicate glass. As a
result of investigations of viscosity and crystallization ability
of boiled glasses, a glass composition No 7A was selected which,
in comparison with the former production No 7, secures a 30 °C re-
duction of the upper crystallization limit and a displacement of
the working interval of fiber production into a zone of more high
temperatures. The improved composition of No 7A glass and its boi-
ling method provide a high production technology of glass pellets
and glass fiber with sufficiently high physico-chemical and mecha-
nical properties. Two figures, two tables, four bibliographic re-
ferences. 1/1

USSR

UDC: 632.951:634.13

KOLESOVA, D. A., Nikitskiy State Botanical Garden

"Effectiveness of Some Preparations Against Pear Aphis"

Moscow, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 25-27

Abstract: Aphis strains, such as *Dysaphis reaumuri Mord.*, *Dysaphis pyri* B.D. and *Anuraphis Guerc.* cause great harm to pear orchards in the Crimea. A total of 19 preparations were tested as aphicides, including 70% saiphos, 50% sevin, endocide and mesurol, 30% phosalone (all in form of wetting powders); 40% vamidothion, phosphamide and rogor, 50% B-58, cidial and trichlorometaphos-3, 80% mekarbam, 30% methylmercaphophos, malathion and phosalone (all in form of emulsion concentrates). It was found that saiphos, vamidothion, phosalone and phosphamide destroyed the aphis completely in one single spraying application in the spring. Treatment

1/2

USSR

KOLESOVA, D. A., Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 25-27

during this period appears to be safe for entomophag which is weakly active
against aphis during this time. Comparative data on the systemic effects,
on applications at various times of the year as well as on the duration
of the protective effects of all tested compounds are cited.

2/2

AP9050893 - E.A. KOLESOVA   UR 0438

NEUROTOXIC EFFECT OF METABOLISM PRODUCTS OF SOME SAPROPHITIC BACTERIA ON ANIMALS

S. R. Reznik, D. G. Zatula, Yu. A. Barshtein,
A. T. Slabospitskaya, E. A. Kolesova and S. S. Krymovskaya

Summary

Study of different strains of saprophitic bacteria gave possibility to detect the ability in some of them to produce toxic substances provoking the diseases similar by their clinical and histological picture to experimental encephalomyelitis in animals under investigation. Under certain conditions the toxical substances produced by such bacteria can penetrate into tissues and organs of animals from which vaccines are prepared and further into vaccine which may be used for prophylaxis of some infectious diseases of people and animals.

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KOLESOVA, L. M., NIFANT'YEV, E. Ye., and ZUBOV, V. P., Moscow State University
imeni M. V. Lomonosov

"Phosphorylation of Poly(Allyl Alcohol) With Dimethyl Phosphite"

Abstract: Phosphorylation of poly(allyl alcohol) [PAA] with dimethyl phosphite
-was carried out in an inert medium. The reaction progress was checked by the
amount of the alcohol isolated and by the phosphorus content in the reaction
product. The reaction begins to go appreciably faster at about 165°, and at
175° it yields in about 30 min a polymer with up to 20% phosphorus content.
Further rise in the temperature or reaction time does not lead to a higher
degree of phosphorylation. Using metallic sodium as a catalyst has also no
effect on the reaction rate or its temperature. Two reactions are possible
during phosphorylation of PAA: formation of a nonsymmetric phosphite fragment
and substitution of both methoxy groups with formation of cross-linked struc-
tures. Regarding the reaction mechanism, the first step involves addition
of an alcohol proton to the phosphorus atom forming a phosphonium cation which
gives an unstable intermediate product with the alkoxy group; the second step
involves breaking up this addition product with formation of a new phosphite
and an alcohol.
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USSR   UDC 615.849.1.015.25

ALEKSEYEVA, G. N., YEL'TSOV, A. V., KOLESOVA, M. B., MAKSIMOVA, L. I.,
RUSANOV, A. M., Leningrad Chemical-Pharmaceutical Institute

"Radioprotective Properties of 1,2-Dithiolium Derivatives"

Abstract: Study of 6 1,2-dithiolium salts and products of their reduction
with dithiomalonylamides, which release sulfur an hydrolysis, showed that
only those containing amino groups in positions 3 and 5 have significant
radioprotective action in mice irradiated with 700 r. Methylation of the
amino group decreased toxicity while slightly intensifying the protective
effect. However, the compounds were all less efficacious than aminiethyl-
thiuronium (AET) which served as the control. The minimum effective dose
was 300 mg/kg. Boosting the dose enhanced the radioprotective effect but
increased the toxicity at the same time, causing convulsions and some deaths.

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1/2   015   UNCLASSIFIED   PROCESSING DATE--02OCT70

TITLE--3,5 DIAMINO,1,2,DITHIOLIUM SALTS -U-

AUTHOR-(03)-KOLESOVA, M.B., MAKSIMOVA, L.I., YELTSOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 610-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINE DERIVATIVE, THIOL, PERCHLORATE, MORPHOLINE

CONTROL MARKING--NO RESTRICTIONS.

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1326   STEP NO--UR/0366/70/006/003/0610/0614

CIRC ACCESSION NO--AP0112420
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0112420
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF
3,5,DIAMINO,1,2,DITHIOLIUM PERCHLORATE (I) WITH
1,3,DIMETHYLBENZIMIDAZOLINE (II) GAVE H SUB2 NC(:S)CH SUB2 C (:S)NH SUB2
AND 1,3,DIMETHYLBENZIMIDAZOLINIUM PERCHLORATE (III).   SIMILARLY, THE
REACTIONS OF I DERIVS. WITH II GAVE III AND RC(:S) CH SUB2 C(:S)R PRIME1
(VI) (R, R PRIME1 GIVEN): NH SUB2, NHME, NHME; MORPHOLINO, MORPHOLINO;
MORPHOLINO, NME SUB2. THE ELECTROPHILIC PROPERTIES OF I ARE CLOSE TO
THOSE OF TROPYLIUM; E.G. THE REACTION OF IV (R EQUALS P PRIME1 EQUALS
MORPHOLINO) WITH TROPYLIUM PERCHLORATE GAVE THE 3,5,DIMORPHOLINO ANALOG
OF I.

UDC 77

USSR

GINZBURG, K. M., KOLESOVA, T. B., BELYAYEVA, V. A., GUTMAN, I. M.

"Aging of Photographic Papers"

Translation: The aging kinetics of AgBr-photographic papers of three gradations is compared: normal (No. 3), contrast (No. 4), and high contrast (No. 6). Aging of the normal type was observed for No. 3 and anomalous aging for Nos. 4 and 6 (with a rapid loss of sensitivity for No. 6). These differences are due to technological characteristics: degree of aging, etc. Certain characteristics of the behavior of No. 6 are associated with the presence of rhodium ions introduced to obtain high contrast. The protective layer which only No. 3 has slows down aging but the introduction of benzotriazole has little effect except to accelerate (thermostatic) aging. The latter should be avoided, however, since according to the data of the authors it distorts the nature of processes occurring in ordinary aging and produces a false picture of the tendency in the change

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GINZBURG, K. M., et al, <u>Uspekhi nauchn. fotogr.</u>, 1970, Vol. 14, pp 171-173

of the photographic properties of the papers. Phenomena were observed indicating the course of redistribution aging in emulsion layers of Unibrom papers. Authors abstract.

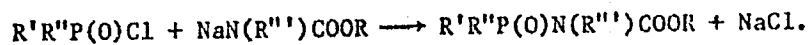ZALIKIN, A. A., KOLESOVA, V. A., STREPIKHEYEV, YU. A.

"N-Phosphorylated Esters of N-Substituted Carbamic Acids"

Abstract: By interaction of the acid chlorides of phosphoric, phosphonic and phosphonous acids with sodium urethanes in a solvent (ether or benzene), a series of N-phosphorylated esters of N-substituted carbamic acids -- N-phosphorylated urethanes and derivatives of phosphoric, phosphonic and phosphonous acids -- were obtained with quite different substitutions on the nitrogen and phosphorus atoms

$$R'R''P(O)Cl + NaN(R''')COOR \longrightarrow R'R''P(O)N(R''')COOR + NaCl.$$

The products of the reaction are tabulated with some of their physical characteristics, yields and formulas. The structure of the compounds was checked by infrared and paramagnetic resonance spectra. The physiological activity of the compounds demonstrated that many of them have broad-spectrum pesticidal properties. Herbicidal, fungicidal and raticidal activity was detected for some of the compounds.
1/1

USSR   UDC [621.357.5.035.4.:621.79.027]:669

KHRISTO, MITIKOV AND SVETOZAR, KOLEV

"Flotation Method for the Removal of Residues From Electrolytes Used in the Electrochemical Treatment of Metals"

Translation: A study was carried out on a process, using the flotation principle, for purifying electrolytes (10% solution of NaCl) during the electrochemical sizing treatment. The flotation system is described. The effectiveness of the purification using different PAV [expansion unknown]. The optimum concentration of selected PAV was determined. (Composition of the PAV was not given).

1/1

1/2   026   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--EFFECT OF THE RATE OF DEFORMATION ON THE STRENGTH OF POLYMER
   MATERIALS IN LIQUID MEDIA -U-
AUTHOR-(04)-TYNNVY, A.N., KOLEVATOV, YU.A., SOSHKO, A.I., KALININ, N.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 5(6), 677-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--DEFORMATICN RATE, POLYMETHYLMETHACRYLATE,
   POLYTETRAFLUOROETHYLENE, MECHANICAL STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0836   STEP NO--UR/0369/70/005/006/0677/0679

CIRC ACCESSION NO--AP0119740
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0119740
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATION BETWEEN DEFORMATION
  RATE OF POLY(ME METHACRYLATE) AND THAT OF FTOROPLAST-4
  (POLY(TETRAFLUOROETHYLENE) AND THE EFFECTS OF ENVIRONMENT (AIR, OLEIC
  ACID, PETROLATUM, H SUB2 O, GASOLINE, ETOH, AND ACETONE) WERE
  INVESTIGATED. THE ADVERSE EFFECT OF LIQS. ON THE STRENGTH OF POLYMERS
  DECREASED WITH INCREASING DEFORMATION RATE.   THIS RELATION IS EXPLAINED
  IN TERMS OF TIME COMPETITION BETWEEN MECH. DEFORMATION AND PHYSICOCHEM.
  PROCESSES LIKE ADSORPTION OR WETTING.   FACILITY: FIZ,-MEKH.
  INST., LVOV, USSR.

UNCLASSIFIED

UDC 533.6.011

USSR

KOLGAN, V. P.

"Applying the Principle of the Minimum Values of the Derivative to the Construction of Finite-Difference Schemes for the Calculation of Discontinuous Solutions of Gas Dynamics"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), Vol 3, No 6, 1972, pp 68-77 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4B185)

Translation: The article is devoted to an examination of several questions on the construction of finite-difference schemes for the calculation of discontinuous solutions of gas dynamics with the aid of the principle of the minimal values of the derivative. The difference scheme constructed for the model equation $v_t + v_x = 0$ has second order precision in coordinates and first order precision in time. The properties of the schemes obtained were investigated, conditions of calculation stability and conservation of function monotonicity were derived. The results of the investigations are assumed to be a basis in the formulation of a finite-difference scheme, for the solution of unidimensional, nonstationary equations of gas dynamics. Examples of calculations of the decomposition of an arbitrary discontinuity are presented and the results

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USSR

KOLGAN, V. P., Uch zap. Tsentr. aerogidrodinam. in-ta, Vol 3, No 6, 1972,
pp 68-77

are compared with calculations performed by other methods. (11 bibliographic
entries, resume)

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USSR

UDC 533.5.013.2.011.5:029.7.025.73

KOLGAN, V. P., Moscow

"The Problem of Diffraction of a Shockwave on a Wedge Moving at Supersonic Speed"

Mekhanika Zhidkosti i Gaza, No 6, 1971, pp 23-29.

ABSTRACT: The flow field resulting from diffraction of a shockwave on a moving wedge is studied in the case of small changes in conditions, when the picture of diffraction is rather simple.

The problem is reduced to a singular integral equation. Examples are presented of solution of equations by digital computer. The solutions indicate that when the drop in the oncoming shockwave is increased in comparison to the calculated value, for which a rather simple picture of the interaction is produced, a compression wave moves through the perturbed area from the center of the sonic circle to the tip of the wedge, while, conversely, when the pressure drop in the oncoming wave is less than the calculated value, an expansion wave moves to the tip of the wedge. It is expected that in an actual flow, as the intensity of the oncoming shockwave is increased, a shockwave will be formed within the perturbed area in place of the compression wave.
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USSR   UDC: 669.185.1

KOLGANOV, G. S., MATUKHNO, G. G., TUPITSA, V. I., PORKHUN, V. G.,
SHEMET, G. A., OMES', N. M.

"Improvement of the Technology of Production of Type 07T1 Steel"

Moscow, Metallurg, No 10, Oct 73, pp 19-20.

Abstract: The Krivorog Metallurgical Plant has begun producing type 07T1
steel to replace type KOM steel for the manufacture of bailing wire. The
new steel is made in 130-ton converters by the standard technology for
manufacture of killed steel, with the maximum quantity of slag run off
after completion of blowing. The remaining slag is thickened by addition
of 1-1.5 t lime. The metal is tapped at a carbon content of 0.06-0.9%, at
1590-1605° C. The metal is deoxidized in the ladle with titanium sponge or
ferrotitanium. During teeming of the steel, when the adjustable head is
1/2 full, liquid aluminum is added to the surface of the metal. The intro-
duction of this step to the technology has reduced total reject rate for
07T1 steel from 1.50 to 0.45%. The quantity of nonmetallic inclusions in
the metal is not increased.

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USSR

UDC 669.046.5

BASHLIY, F. I., KOLGANOV, G. S., KOZIN, G. N., and AVORONOV, Yu. F.

"Quality of Metal Produced With Bath Oxygen Blowing"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of Works, Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 107-110

Translation of Abstract: Results are presented of an investigation of the effect of oxygen blowing on metal acidity. Attention is given to the method of subdeoxidation of low-carbon steels by silicon with the purpose of lowering the metal acidity and reducing the development of gas bubbles. 2 figures, 3 tables, 6 references.

1/1

TITLE--HIGH ENERGY PROTONS DURING THE ABSORPTION OF MUONS BY EMULSION
· NUCLEI -U-

AUTHOR-(03)-VAYSENBERG, A.O., KOLGANOVA, E.O., RABIN, N.V.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(4), 830-9

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HIGH ENERGY PARTICLE, PROTON, MUON, PARTICLE ABSORPTION,
  EMULSION, NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1074   STEP NO--UR/0367/70/011/004/0830/0839

CIRC ACCESSION NO--AP0136494

UNCLASSIFIED   PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136494
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRUM OF RHO WITH ENERGIES
E SUBP GREATER THAN OR EQUALS TO 25 MEV WAS INVESTIGATED, THE RHO BEING
EMITTED FROM HEAVY NUCLEI OF AG, BR EMULSION DURING THE ABSORPTION OF
STOPPED NEG. MUONS. THE NOS. OF THE FAST SECONDARY RHO PER ONE
ABSORPTION ACT WERE (3.16 PLUS OR MINUS 0.34) TIMES 10 PRIME NEGATIVE 4
AND (4.7 PLUS OR MINUS 1.1) TIMES 10 PRIME NEGATIVE 5 FOR THE E SUBP
VALUES GREATER THAN 25 AND GREATER THAN 40 MEV., RESP. THE BACKGROUND
FROM THE PION STARS WAS CAREFULLY ANALYZED. THE BACKGROUND FROM 1 PRONG
PION STARS WITH THE ENERGIES OF RHO GREATER THAN OR EQUALS TO 25 MEV AND
GREATER THAN OR EQUAL TO 40 MEV DOES NOT EXCEED 8 AND 30PERCENT, RESP.
        FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR   UDC 621.039

KIR'YANOV, G. I., ALLAKHVERDOV, A. Sh., GUSEV, A. V., and KOLGANOVA, I. V.

"Development of a Pulsed Neutron Generator to Study Reactors"

Tr. VNII radiats. tekhn. (Works of the All-Union Scientific Research Institute of Radiation Technology), 1970, No 5, pp 265-274 (from RZh-Fizika, No 4, Apr 71, Abstract No 4V583)

Translation: A neutron generator was developed with a mean neutron flux of 10^7 neutron/sec with a pulse repeition rate of up to 20 Hz and a pulse width of ∿1.5 μsec. The length of the neutron source is 1100 mm and the diameter is 48 mm. Measurement of the operating stability of the generator showed that in 2 hours of operation the maximum deviation of the output of neutrons from the mean value did not exceed 8%. O. V. Sh.

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USSR

KOLGIN, Ye. A., CHERNIGOVSKIY, V. V.

"An Economical Gas-Discharge Light Source for Technological Devices"

Translation: The paper describes designs of glow-discharge lamps filled with neon with a power of 6 W and a brightness of 3000 nits lasting at least 5000 hours. The optimum gas pressure from the durability standpoint is 15 mm Hg. Practical power supply circuits are given. Computations are presented which show the economic advantage of using this type of lamp instead of incandescent lamps, based on an example of the use of the lamps in a phototracking system. Ye. N. Antonov.

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USSR

UDC: 61.615.47:621.38

PUPKO, I. D., ~~KOLOV~~ V. K., KEYVER, A. R., Leningrad Institute of Precision Mechanics and Optics

"An Electrocardiogram Simulator"

Leningrad, Izvestiya VUZov Priborostroyeniye, Vol 15, No 6, 1970, pp 19-23

Abstract: Methods are considered for constructing devices to imitate the bio-electric activity of the myocardium. Two modifications of the EKG simulator are described: 1) a simplified modification which provides a fairly wide range of both normal and pathological forms of EKG, and also permits continuous variation of any parameters of the EKG over broad ranges close to those encountered in clinical practice; 2) a more complex modification which satisfies these require-ments and also provides for calibration of EKG rhythms to a precision of the order of 20 msec, automatic variation of EKG parameters according to a preset program, and simulation of arrhythmia. The simplified imitator is used chiefly for adjusting EKG amplifiers, while the second version may be used for adjusting and testing automatic EKG analyzers.

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USSR   UDC   621.376.5(788.8)

FILATOV, N. A., ZUBKOV, Yu. A., KOLIBABA, I. I.

"A Pulse Modulator"

USSR Author's Certificate No 261459, Filed 23 Oct 68, Published 22 May 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D369 P)

Translation: This Author's Certificate introduces a pulse modulator which contains a high-voltage DC source with charging resistor, a vacuum-tube commutator, a sub-modulator, a correcting circuit made up of an inductor and a resistor, and a storage capacitor. To stabilize the amplitude of the pulses formed and to eliminate break-downs in the commutator and in the load, the modulator contains an additional storage capacitor which is connected in parallel to the main storage capacitor through a limiting resistor. V. P.

1/1

TITLE--AN INVESTIGATION INTO THE FATIGUE OF STEEL WITH BI HARMONIC LOADING
-U-

AUTHOR-(03)-BUGLOV, YE.G., KOLIKOV, E.A., FILATOV, M.YA.

COUNTRY OF INFO--USSR

SOURCE--PROBLEMY PROCHNOSTI, JAN. 1970, (1), 46-49

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CYCLIC LOAD TEST, STEEL PROPERTY, FATIGUE STRENGTH/(U)0962
STEEL, (U)ST4 STEEL, (U)ST45 STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0275   STEP NO--UR/3663/70/000/001/0046/0049

CIRC ACCESSION NO--AP0124035
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0124035
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FATIGUE STRENGTH OF THREE
   STEELS, ST. 4, ST. 45, AND 09G2, WAS INVESTIGATED UNDER CONDITIONS OF
   TWO SUPERIMPOSED CYCLIC LOADS OF SUBSTANTIALLY DIFFERENT FREQUENCIES.
   SUCH A CONDITION OCCURS IN VARIOUS APPLICATIONS, E.G., ENGINES, POWER
   EQUIPMENT, AVIATION, AND SHIP CONSTRUCTION. EQUATIONS ARE PRESENTED FOR
   EVALUATING THE FATIGUE LIFE WITH BI HARMONIC LOADING IN TERMS OF THE
   SINGLE FREQUENCY FATIGUE CURVE.

UNCLASSIFIED

USSR

UDC 621.355.2.035.4

BORDT, YE. F., NOVODEREZHKIN, V. V., and KOLIKOVA, G. A.

"Some Questions on the Technology of the Grid Formation in Automobile Type Lead-Acid Batteries"

Sb. rabot no khim, istochnikam toka. Vses n.-n akkumulyator. in-t (Collection of Works on the Chemical Source of Current. All-Union Scientific Study Institute for Storage Batteries), Vyp 7, 1972, pp 48-54 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L228 by V. S. Levinson)

Translation: The factors were considered which influenced the change in the temperature of the electrolyte during the formation of the electrode in lead batteries: the depth of the bottom space of the forming tank, the arched assembly of the electrode. In order to avoid a significant increase in the temperature of the electrolyte during the process of the formation of the electrode, for example, of the types 2STA, for D to a first approximation 0.8-2 amps/decimeter^2, it was necessary to use a tank having a deep bottom space, approximately 260 mm. The transfer to a double assembly for a balance of the amount of positive charge on the electrode in the formed grid was accompanied by an increase in both the temperature of the electrolyte and the voltage and by an extension of the process of formation. The application of the double assembly is necessary during the formation of thin electrodes and traps having an increased electrical conductivity.

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USSR

UDC: 519.2

VOLODIN, S. V., KOLIN, K. K.

"On Approximating the Distribution of Customer Waiting Time in Single-Channel Queuing Systems"

Moscow, Sist. raspredeleniya inform.--sbornik (Information Distribution Systems--collection of works), "Nauka", 1972, pp 36-41 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V85 [authors' abstract])

Translation: A simple method of approximating the distribution of the waiting time of customers in a line is proposed for single-channel queuing systems with unlimited waiting. The essence of the method is that the actual distribution is replaced by an indicative distribution having equal mathematical expectation. It is shown that the given method of approximation can be used for a number of queue disciplines, including queuing with relative priorities. To evaluate the accuracy of the approximation, the results of calculation by the approximate formulas are compared with mathematical modeling data.

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UDC: 519.2

USSR

KOLIN, K. K.

"Concerning the Effectiveness of Priority Queue Disciplines"

Moscow, Sist. raspredeleniya inform.--sbornik (Information Dis-
tribution Systems--collection of works), "Nauka", 1972, pp 42-53
(from RZh-Kibernetika, No 10, Oct 72, abstract No 10V86 [author's
abstract])

Translation: An estimate is made of the effectiveness of pri-
ority queuing systems for serving different types of customers
in a single-channel system with unlimited waiting. Queue dis-
ciplines with relative and absolute priorities are compared with
each other and with the first come first served discipline with
respect to the criterion of an integrated penalty per unit of
time of operation of the system. Conditions are considered for
realizing an advantage from the use of priority disciplines, as
well as relations for the magnitude of this advantage as a func-
tion of different parameters of the system. It is shown that
using priority disciplines in many instances may produce an ef-
fect equivalent to raising the total productivity of the system.
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- 21

USSR

UDC: 8.74

LIPAYEV, V. V. and KOLIN X K

"The Makeup of Operations and the Statistics of Their Use in Digital Computer Control Programs"

Moscow, V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Techniques and Programming--collection of works) "Sov. Radio," No 7, 1972, pp 120-126 (from RZh--Matematika, No 8, 1972, Abstract No 8V630)

Translation: Results are given of the statistical analysis of the makeup of operations in the programs of four digital computers used in complex systems of automated object control indicating the complex branching of the programs and the preponderance of logic operations over arithmetic. Recommendations are made for the use of special commands in digital computers of this type for performing operations with part of a word and operations with constants. Conclusions are drawn concerning the advantages of using commands in controlling digital computer systems designed specially for solving information-logic problems. Authors' abstract

USSR   UDC: 8.74

LIPAYEV, V. V., KOLIN, K. K.

"Concerning the Make-up of Operations and the Statistics of
Using Them in Digital Control Computer Programs"

Translation: The paper gives the results of statistical anal-
ysis of the make-up of operations in the programs of four com-
puters used in complex systems of automated control of objects.
These results show the appreciable branchedness of the pro-
grams and the predominance of logic operations over arithmetic
operations. Recommendations are made on using a special class
of commands in digital computers to execute operations with
part of a word and operations with constants. It is concluded
that systems of commands specifically directed toward solving
information-logic problems should be used in digital control
computers. Authors' abstract.

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USSR

UDC: 8.74

LIPAYEV, V. V., KOLIN, K. K., SHEREBROVSKIY, L. A.

"Software for Digital Control Computers"

Matematicheskoye obespecheniye upravlyayushchikh TsVM (cf. English above),
Moscow, "Sov. radio", 1972, 528 pp, ill. 2 r. 10 k. (from RZh-Kibernetike,
No 6, Jun 72, Abstract No 6V525 K)

Translation: The paper deals with the basic problems of developing general
software for digital computers used in systems of automated control of ob-
jects in real time. Consideration is given to software facilities of tech-
nological processes for planning algorithms and programs for digital con-
trol computers (programming, debugging, obtaining documentation), as well
as to software for organizing the computational process in the operation of
digital computers in a control system. Considerable attention is given to
the goals and structure of synthesis of software systems for digital con-
trol computers, and also to methods and criteria for evaluating their ef-
fectiveness. Consideration is given to the standard structure of an oper-
ational system, operating conditions, and algorithms of basic programs of
organization of the computational process. Methods of queuing theory are

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USSR

LIPAYEV, V. V. et al., Matematicheskoye obespecheniye upravlyayushchikh
TsVM, Moscow, "Sov. radio", 1972

used to study the various disciplines of monitoring computations in the
case of unlimited waiting of customers in a queue and with loss of customers
(messages) in a limited buffer memory of a digital computer. Problems and
methods of automating the process of programming for digital control com-
puters, programming languages, and also algorithms of translation and moni-
toring of mutually related large-volume programs are considered. A stan-
dard structure is presented for the system of automating programming and
output of technical documentation for algorithms and programs. An analysis
is made of the basic problems of automating debugging of algorithms and
programs for digital control computers, the structure and circuitry of an
automated debugging system.

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USSR   UDC 621.397:612.843.721

KOLIN, K. T., KIVRIN, V. I., MOROZOV, V. A.

"Stereotelevision Camera with a Small Transmission Base"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi.
Vyp. 3 (Materials of the Scientific and Technical Conference. Leningrad
Electrotechnical Communications Institute. Vyp. 3), Leningrad, 1970, pp 36-
39 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G116)

Translation: This article contains an investigation of possible means of
constructing stereotelevision cameras with a small transmission base for one
and two-channel stereotelevision systems. The expediency of applying two
methods of constructing stereotelevision cameras with orthogonal arrangement
of the transmitting tubes in which the transmission base can vary from zero
to any given value is demonstrated.

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USSR   UDC:532.546

BASHKIN, V. A., KOLINA, N. P., YUSHIN, A. Ya., Moscow

"Study of Heat Exchange on the Surface of a Two-Step Wedge in a Supersonic Stream"

Moscow, Mekhanika Zhidkosti i Gaza, No 5, Sep-Oct 73, pp 158-163

Abstract: Results are presented from a theoretical and experiemntal study of a boundary layer in the area of one local section of the surface of great curvature in the case of rarefaction flow. The theoretical study is performed within the framework of the classical theory of a laminar boundary layer in order to establish the primary trends in the distribution of local friction stress and local heat flow with increasing surface curvature. The experimental study was performed for the corner point on a stepped-angle wedge.

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USSR   UDC: 519.24

KALINIKOV, Yu. S., LIFSHITS, A. L.

"On Some Modifications of an Algorithm of Global Statistical Search Over
a Guiding Sphere"

V sb. Zadachi statist. optimizatsii (Problems of Statistical Optimization
--collection of works), Riga, "Zinatne", 1971, pp 197-202 (from RZh-Kiber-
netika, No 12, Dec 71, Abstract No 12V410)

Translation: Three modifications of an algorithm of global random search
with a guiding sphere are considered. Experiments done on a two-dimen-
sional multiple-extremum quality function show the effectiveness of these
algorithms and an appreciable reduction in the time of finding the global
extremum. Authors' abstract.

1/1

USSR

681.142.71:658.52.011.56

KOLIN'KO, A. I., KIRILYUK, N. I.

"Selection of Optimal Acquisition of Computer Equipment for Computer Center Processing Information for Control of an Enterprise"

Kiev, Mekhanizatsiya I Avtomatizatsiya Upravleniya, No. 2, 1970, pp 20-22.

Abstract: The principle of cost optimization is applied to problems of acquisition of computer equipment for plant data processing purposes. The problem consists of seeking a sequence of acceptable variants of computer center equipment sets involving the minimum cost, considering both capital investments and operating expenses. The method of successive analysis of variants is used, and a brief outline of the steps to be used in a program for computerized solution of the problem is presented.

1/1

USSR

KOLIN'KO, L. YE., NARBUT, T. P., BONDARENKO, L. A., BONDARENKO, S. I.,
DMITRIYENKO, I. M.

UDC 537.312.62

"Methods of Creating Weak Superconducting Contacts"

Tr. Fiz.-tekhn. in-t nizk. temperatur AN USSR (Works of the Physico-Technical Low Temperature Institute of the Ukrainian SSR Academy of Sciences), 1970, vyp. 9, pp 91-110 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D469)

Translation: A study was made of the basic methods of obtaining weak superconducting contacts: 1) micropuncture of the dielectric layer or normal metal between the superconductors; 2) pressing a sharp needle to the flat surface of the superconductor; 3) electric microrupture (fritting) of the dielectric layer between the metals. The possibility of using whiskers of various metals as thin conducting couplings is also investigated. The basic characteristics of the contacts obtained by the enumerated methods are analyzed, and conclusions are drawn regarding the prospectiveness of their application in devices using the phenomenon of quantum interference in superconductors. There are 6 illustrations, 1 table and a 37-entry bibliography.

1/1

UDC 615.471:613.647:612.014.426

USSR

KOLIUKH, G. D., and YEVTUSHENKO, G. I., Candidate of Medical Sciences, Kharkov Scientific Research Institute of Labor Hygiene and Occupational Diseases

"Experimental Equipment for the Study of the Biological Effect of Pulsed Electromagnetic Fields (PEMF)"

Moscow, Gigiyena i Sanitariya, No 11, Nov 1971, pp 113-114

Abstract: Designed and built jointly by the Institute of Labor Hygiene and Occupational Diseases and the Polytechnical Institute in Kharkov, the equipment generates PEMF of up to 400,000 a/m. It includes the following basic parts: the control unit for turning the equipment on and monitoring the various para- meters; a high voltage transformer and rectifier unit; a battery of high voltage condensers; an induction unit which also houses a container for experimental animals; a commutator-trigatron which discharges the pulses at selected inter- vals; a pulse-ignition device which controls the commutator-trigatron; and a power input unit. The various parts are mounted to form two installation units. The high-power discharge current impulse which is fed through the induction coil has the form of damped harmonic oscillations. The experimental animal container easily accommodates mice, rats, guinea pigs, and rabbits.

UNCLASSIFIED

PROCESSING DATE--09OCT70

1/2   024

TITLE--DETERMINATION OF ABSORBED DOSES OF LONG WAVE ROENTGEN RADIATION WITH THE AID OF TISSUE EQUIVALENT PLASTIC SCINTILLATORS -U-

AUTHOR-(03)-FROLOVA, A.V., KOLTILOVA, V.G., KRONGAUZ, A.N.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 4, PP 57-61

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLASTIC, SCINTILLATOR, RADIATION DOSIMETRY, RADIUM, RADIOTHERAPY, X RAY MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0956

STEP NO--UR/0241/70/015/004/0057/0061

CIRC ACCESSION NO--AP0109113

UNCLASSIFIED

2/2   024
CIRC ACCESSION NO--AP0109113
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE PAPER DEALS WITH PROBLEMS OF
USING TISSUE EQUIVALENT SCINTILLATORS FOR DETERMINING THE ABSORBED
ENERGY AND DISTRIBUTION OF ABSORBED DOSES OF LONG WAVE ROENTGEN
RADIATION.   IT IS SHOWN THAT THE RATIO BETWEEN THE VALUE OF ABSORBED
ENERGY AND THE TECHNICAL EFFICIENCY OF THE SCINTILLATOR IS DETERMINED BY
A NUMBER OF PARAMETERS.   THE AUTHORS GIVE THE VALUES OF THESE PARAMETERS
FOR SOME RADIATION REGIMES USED IN RADIUM THERAPY.   FACILITY:
MOSKOVSKIY N-I RENTGENORADIOLOGICHESKIY INST. MINISTERSTVA
ZDRAVOOKHRANENIYA RSFSR.

UDC 621.316.722.1

USSR

KOLKANOV, M.F.

"Determination Of The Parameters Of Forced Oscillations In Discontinuous-Type Regulators"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works Of The Moscow Electrical Engineering Institute Of Communication), 1970, No [not shown], pp 163-167 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B544)

Translation: The basic deficiency of two-position discontinuous-type regulators with ballast inductance, operating in a regime of auto-oscillation -- the relatively large magnitude of the output voltage pulsation and the large limits of the change of frequency of auto-oscillation -- can be eliminated during operation of discontinuous-type regulators in a regime of forced oscillations which are assured by an external source. The exterior periodic reaction during fulfillment of specific conditions determines the frequency of the regulator. If the frequency of the exterior reaction is larger by far than the frequency of possible auto-oscillations, then the pulsations can be made sufficiently small. Considering the induction and capacitance of the filter and the resistance of the load in the form of the linear part of the regulator, the relative turn-on time is determined of the regulating key [klyuchevyy] element as a function of the magnitude of the input voltage, the reference voltage, the threshold operation of the trigger element, and the frequency parameters of the forced reaction. The critical amplitude is determined of the forced reaction and the amplitude of the output pulsations. 3 ill. 2 ref. S.D.

1/1

UDC 616.5-001.17-097.2

USSR

KOLKER, I. I. and VUL', S. M., Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR

"Simplification of the Antigenic Structure of Burned Human Skin (Eschar) Compared With That of Normal Human Skin"

Abstract: The antigenic structure of burned and normal human skin was studied by the double gel precipitation method. Tests of two systems (serum against eschar - antigen from eschar and serum against normal skin - antigen from normal skin) revealed the presence in the eschar of antigens qualitatively different from these in normal skin. Moreover, normal skin contained antigens qualitatively different from those in the eschar. These findings suggest that some antigens characteristic of normal human skin are missing in burned skin. The phenomenon of "antigenic simplification" was confirmed by an experiment involving the use of anti-eschar serum and gamma globulin from anti-normal skin serum. The gamma globulin fraction did not react with antigen from the eschar, indicating that normal organ-specific skin antigens are lost in burned skin.
1/1

UDC 617-001.17-07:616-056.3:576.851.252

USSR

KOLKER, I. I., NOVIKOVA, T. K., and MOROZOV, S. S., Laboratory of Microbiology and Immunology and Burn Division, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"Allergy to Staphylococci in Patients With Burns"

Abstract: The persistent presence of Staphylococci in burn wounds, particularly in cases of severe burns, combined with absence of a stable immunity to infection with these microorganisms, led to the assumption that in patients with thermal burns an allergic state develops which plays an important role in the pathogenesis of Staphylococcus infections. Skin tests with Staphylococcus toxoid were carried out on 255 patients with burn traumas, in which the toxoid was applied intracutaneously. A positive skin reaction to the toxoid in a minimum dilution of 1:100, to which healthy persons do not react, was regarded as a sign of heightened sensitivity. The tests disclosed that the patients had initially a lowered skin sensitivity to the toxoid, which lasted for a period that increased in length with increasing severity of the burns. In patients with severe burn exhaustion and in cases of ultimately fatal burns

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- 27 -

USSR

KOLKER, I. I., et al., Klinicheskaya Meditsina, Vol 49, No 3, Mar 71,
pp 87-92

no skin reactions were observed during the entire period of observation (up
to 1 yr). On termination of the period of lowered sensitivity, which must be
regarded as due to inadequate immunological response, a heightened sensitivity
was exhibited, due to allergic reorganization of the organism with respect to
Staphylococci. Patients who had had severe burns and who returned 2-5 yrs
later for treatment of scars or trophic ulcers exhibited a very high sensi-
tivity to Staphylococcus toxoid. The sensitivity was more pronounced in
patients with trophic ulcers than in those with scars. Sensitization to
Staphylococci in persons with burns must be regarded as a factor that con-
tributes to the prolonged course of Staphylococcus infections in burn patients
and to the recurrence of these infections.

2/2

MEDICINE
Burn Studies

KOLKER, I.I., VUL', S.M., and NEVINNAYA, A. P., Laboratory of Microbiology Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"Study of the Antigenic Structure of Burned Human Skin"

Abstract: A comparison was made of unexhausted antisera from burned and undamaged skin. Common antigenic components were identified in the burn scab, normak serum, skin, and other tissues of healthy persons. Diffusion precipitation in agar was used; water-soluble extracts served as antibodies. The optimum antibody concentration was 5-10 mg/ml. Solutions of bacteria isolated from the burn wounds were used as bacterial antibodies. Antibodies found in the burned human skin included varieties which are different from those found in the serum of normal skin. These varieties are not of a microbial nature and are not produced by bacteria occupying the burn wounds. It is probable that elements characteristic of inflammatory processes in the organism participate in the formation of these different antibody complexes.

1/1

KOLKER   M.I.

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243046 OUTPUT VOLTAGE OF A THYRISTOR CONVERTER is continuously varied while equal load sharing by the thyristors is ensured. The phase of gating pulse for a thyristor depends not only of the reference voltage (U_{zad}) but of the load voltage as well. Consequently the relationship between the firing angle of the thyristor and the control voltage to the driver (1) is made to depend on the deviation between the reference voltage (U_{zad}) and the time integral of supply voltage for the duration of thyristor conduction (2). This solution ensures uniform load-sharing in both half cycles.

29.6.66 as 1086914/24-7. M.I. KOLKER & IU.V.MONAKHOV. ELECTROTHERMAL EQUIPMENT RES.INST.(30.9.69) Bul 16/ 5.5.69. Class 21d. Int.Cl. H 02m.
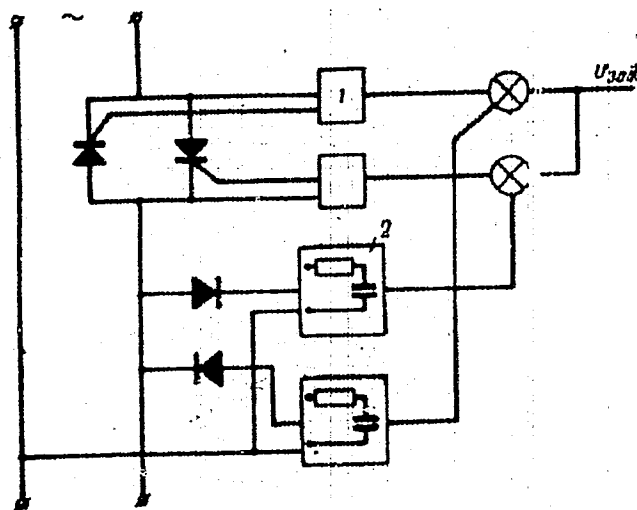
AUTHORS: Kolker, M. I., Monakhov, Yu. V.

Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Elektrotermicheskogo Oborudovaniya

1/2   19770785

AA0044267

19770786

AA0044265   UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243044 PHASE-SHIFTING NETWORK is simplified. Magnetic
amplifier (2) is fed by a voltage that leads the
supply voltage by 15° caused by RC network (1), and by
a voltage which lags the supply voltage by 45° caused
by RC network (3). The output signal of the magnetic
amplifier is constant in amplitude and its phase can
be varied through a range of 180°.

4.8.66 as 1095532/24-7. IA.A.POLISHCHUK & M.I.KOLKER.
ELECTROTHERMAL EQUIPMENT RES.INST. (30.9.69.) Bul 16/
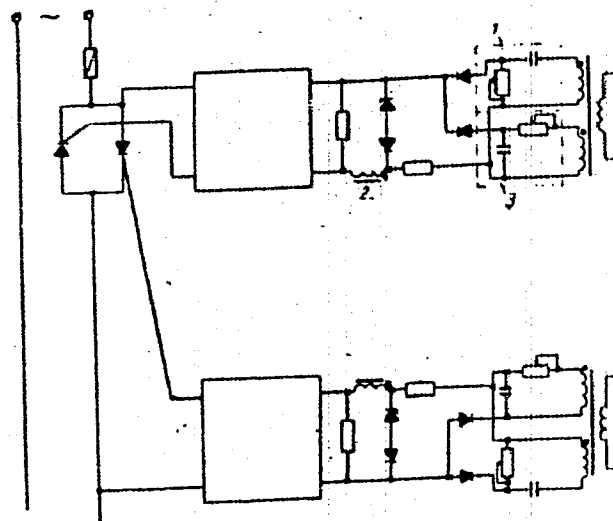5.5.69. Class 21d². Int.Cl. H·02m.

AUTHORS: Polishchuk, Ya. A., Kolker, M. I.,

Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Elektrotermicheskog
Oborudovaniya

1/2

19770781

AA0044265

19770782

USSR

UDC: 8.74

ZUBER, I. Ye., KOLKER, Yu. I., POLUEKTOV, R. A.

"Control of the Numbers and Age Composition of Populations"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 129-138 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V600)

Translation: Bisexual populations are examined with regard to the age distribution of individuals. It is shown that the dynamic particulars of a bisexual population are related to characteristic parameters of individuals of the female sex. Males play a subordinate role in the model. Variation in the numbers and age structure of the population is completely determined by the nature of the variation in the age structure of the population of female individuals in time. Authors' abstract.

1/1

USSR

KOLKOV, V. G.

"Investigating the Eddy System of a Helicopter Supporting Propeller"

Translation: The method and its basic results are given of an experimental investigation, in a vertical aerodynamic tube of the TsAGI (Central Aerohydrodynamic Institute) form, into the eddy system of the supporting propeller in its circular fanning, in a broad range of flight velocities and specific loadings on the propellers. The tests were conducted on the model of a two-blade propeller with a diameter of 2.1 m, the sleeve of which was equipped with a tensometric weighted element for measuring total forces and moments. To visualize the eddy system, an oily smoke expelled from the ends of the blades, and fast cinematography were used. The forms of the eddy systems at various operation modes of the propeller and limits of utility of their theoretical models were established. A. N. Volodko

1/1

TITLE--REMOVAL OF DIVERGENCIES IN QUANTUM MECHANICS -U-

AUTHOR--KOLKUNOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 1, PP 72-77

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--QUANTUM MECHANICS, SCHROEDINGER EQUATION, S MATRIX, MATRIX ELEMENT, SERIES

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1017   STEP NO--UR/0646/70/003/001/0072/0077

CIRC ACCESSION NO--AP0130052

UNCLASSIFIED

2/2   017
CIRC ACCESSION NO--AP0130052

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ONE DIMENSIONAL SCHRODINGER
EQUATION SOLUTION WRITTEN IN THE FORM OF THE S MATRIX (ORDERED
EXPONENTIAL) IS EXPANDED IN THE SERIES, THE TERMS OF WHICH ARE ALL
INFINITE. IT IS SHOWN THAT THE ORIGIN OF INFINITES LIES IN THE INFINITE
VALUE OF MATRIX ELEMENT PHASE OF THE EXACT SOLUTION. USING SEPARATE
EXPANSIONS FOR THE PHASE AND THE MOLULES OF MATRIX ELEMENT AND COMPARING
THEM WITH THE S MATRIX EXPANSION WE SUCCEEDED IN OBTAINING THE SQUARED
MODULES EXPANSION WHICH DOES NOT CONTAIN ANY INFINITIES. THE TECHNIQUES
ELABORATED FOR THE CALCULATION OF THE MATRIX ELEMENT MODULUS ARE
ILLUSTRATED BY AN EXAMPLE POSSESSING THE ANALYTICAL SOLUTION.

UNCLASSIFIED

USSR

KOLKUNOV, V. A.

"S-Matrix Problems"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 2, No 2, February 1970,
pp 169-180

Abstract: The S-matrix plays a central role in quantum theory inasmuch as it
includes all the information concerning the dynamics of the interaction process.
The study of its characteristics and especially the determination of its elements
for various forms of interaction are very difficult problems, which have not as
yet been fully solved. This paper attempts a new approach. It explains the
theory of the multiplicative second-order integral based on determination of the
S-matrix integral as an ordered product of two-row matrices. This permits com-
puting the S-matrix of two-level systems. The explanation uses the unidimensional
Schrödinger equation as an example. The author then introduces the concept of
the S-matrix of the Schrödinger equation and its parametrization by means of the
Euler angles. He explains the graphical technique of matrix presentation and
gives the physical interpretation of the multiplicative integral on which it is
based. The geometrical interpretation of the second-order matrix is given, and

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USSR

KOLKUNOV, V. A., Teoreticheskaya i Matematicheskaya Fizika, Vol 2, No 2, February
1970, pp 169-180

it is shown that the modulus and two phases can be attributed to the matrix by
analogy with complex numbers. Examples are given of computations by step po-
tentials in which they reduce to determination of the sides of the Lobachevski
polygons.

2/2

Acc. Nr: AP0046237

K

Ref. Code: UR 0646

THE S-MATRIX PROBLEMS

V. A. Kolkunov

The approximative solution of the one-dimensional Schrödinger equation by means of approximation of the potential by the sum of step potentials is shown to lead to the notion of multiplicative integral. For the analysis of the latter the graphical scheme of calculations is developed. The problem of wave traveling in the potential field is investigated with the aid of the S-matrix parametrisation through Eulerian angles and the relationship is revealed between the solution of the equation and the Lobachevsky geometry.

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REEL/FRAME
19781355

USSR

KOLIN, I. V.

"Natural Oscillations of Liquid in Horizontal Vessel with Symmetrical
Doubly Connected Cross-Section"

Uts. Zar Tsentr. Aero-gidrodinam. In-ta., [Scientific Writings of the Central
Aerohydrodynamic Institute], 1971, 2, No 3, pp 117-120. (Translated from Re-
ferativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1B506 by S. V. Nesterov).

Translation: The problem is solved of determining the natural frequencies of
an ideal in compressible fluid in a horizontal, cylindrical vessel, the cross-
section of which consists of a doubly connected area. Using the general re-
sults produced in the problem of the oscillations of a fluid, the author finds
approximate nonlinear equations describing the change in free oscillating
frequency and coordinates of the points of application of hydrodynamic forces
as a function of the height of the level of the fluid in the vessel. A com-
parison with experimental results shows that the approximate differential
equations allow the frequency of free oscillations to be determined with an
accuracy sufficient for technical applications.

1/1

UDC 681.142.1

USSR

LIPAYEV, V. V., KOLIN, K. K., SEREBROVSKIY, L. A.

"Control Computer Software"

Matematicheskoye Obespecheniye Upravlyayushchikh TsVM, Moscow, Sovetskaya Radio Press, 1972, 528 pp

Translation of Annotation: This monograph analyzes the main problems involved in the development of general software for digital computers used in automated control systems in real-time applications. The software for technological processes of planning algorithms and programs of control computers (programming, debugging, production of documentation) is studied, as well as the software for the organization of the computer process as the computer functions in the control system.

Considerable attention is given to problems and the structure of software systems for control computers, as well as methods and criteria for evaluating their effectiveness. A typical structure of an operational system, its functioning modes, and the algorithms of the main programs organizing the computational process are studied. Queueing theory methods are used to study various computation disciplines with unlimited waiting of requests in line or with losses of requests (messages) in the limited buffer memory of the computer.

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USSR

Lipayev, V. V., Kolin, K. K., Serebrovskiy, L. A., Matematicheskoye Obespecheniye Upravlyayushchikh TsVM, Moscow, Sovetskoye Radio Press, 1972, 528 pp.

Problems and methods of automation of the process of programming for control computers, programming languages, and translation and testing algorithms for inter-related large-volume programs are studied. A typical structure of a system for automation of programming and output of technical documentation on algorithms and programs is presented. The basic problems of automation of debugging of algorithms and programs for control computers and the structure and technological plan for an automated debugging system are analyzed.

The book is designed principally for scientific workers and engineers in the area of investigation and planning of the software of digital control computers. It can be used as a software course text for teachers and students in the higher levels of colleges of the corresponding specialties. 156 figures, 2 tables, 102 biblio. refs.

2/2

UNCLASSIFIED   PROCESSING DATE--13NOV70

1/2   014
TITLE--ELECTROCHEMICAL FLUORINATION OF DIMETHYLANILINE,
DIMETHYLCYCLOHEXYLAMINE, AND N,N,DIMETHYLPENTAFLUOROANILINE -U-
AUTHOR-(05)-PLASHKIN, V.S., PUSHKINA, L.N., MERTSALOV, S.L., KOLLEGOV,
V.F., SOKOLOV, S.V.
COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1006-11

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORINATION, ANILINE, AROMATIC AMINE, NUCLEAR MAGNETIC
RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1345   STEP NO--UR/0366/70/006/005/1006/1011

CIRC ACCESSION NO--AP0135019
                          UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2   014
CIRC ACCESSION NO--AP0135019
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE ELECTROCHEM. FLUORINATION OF
THE TITLE COMPOS. AT MINUS 20DEGREES GAVE IN ALL CASES CF SUB3 (CF SUB2)
SUB5 N(CF SUB3) SUB2 AND N,N,DIMETHYLPERFLUOROCYCLOHEXYLAMINE.   THE
YIELDS AND RELATIVE AMTS. OF THESE COMPOS. VARY WITH THE STARTING
MATERIAL AND THE REACTION TIME. NMR SPECTRA OF THE PRODUCTS ARE
DISCUSSED.   FACILITY: URAL. POLITEKH. INST. IM. KIROVA,
SVERDLOVSK, USSR.

UNCLASSIFIED   PROCESSING DATE--13NOV70

1/2   010
TITLE--APPARATUS FOR DETERMINING THE INDUCTION PERIOD OF PARAFFIN
    OXIDATION BY A DIFFERENTIAL THERMAL METHOD -U-
AUTHOR-(03)-GOLTSOVA, L.F., KHARLAMPOVICH, G.D., KOLLEGOV, V.E.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(2), 247-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL LABORATORY APPARATUS, ALKANE, HYDROCARBON OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1995   STEP NO--UR/0032/70/036/002/0247/0248

CIRC ACCESSION NO--AP0125584
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0125584
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE APP. IS DESCRIBED IN
DETAIL. THE METHOD IS BASED ON THE RAPID TEMP. INCREASE OF THE PARAFFIN
SAMPLE BECAUSE OF INTENSIVE RELEASE OF HEAT ON AUTOCATALYSIS AFTER THE
END OF THE INDUCTION PERIOD. PARAFFIN SAMPLES (WITH OR WITHOUT
ANTIOXIDANTS) WERE ADDED TO 5 TEST TUBES (THE STD. IS IN THE 6TH ONE)
AND LOWERED INTO THE INNER VESSEL OF AN ULTRATHERMOSTAT WITH REQUIRED
TEMP. (ACCURACY PLUS OR MINUS 0.2DEGREES). AFTER HEATING THE SAMPLE TO
THE OEPRATING TEMP., CLEANED AND PREHEATED AIR WAS INTRODUCED AND THE
SAMPLE TEMPS. WERE MEASURED BY A THERMOCOUPLE. AFTER THE END OF THE
INDUCTION PERIOD, A TEMP. RISE (1.5-2.0DEGREES) TOOK PLACE. ON THE
BASIS OF IODOMETRIC DETN. OF H SUB2 O SUB2, IT WAS FOUND THAT THE TEMP.
DURING INDUCTION PERIOD INCREASED BY 0.6DEGREES. ON COMPARISON OF
RESULTS OF IODOMETRIC AND THERMAL METHODS, THE THERMAL METHOD IS SHOWN
TO BE MORE ACCURATE THAN THE IODOMETRIC (RELATIVE ERROR 0.5-1.0 AND
3.0-4.0PERCENT, RESP.).   FACILITY: URAL. POLITEKH. INST. IM.
KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

UDC 541.49:547.558 + 546.46

USSR

ROMM, I. P., SADYKOVA, E. M., GUR'YANOVA, Ye. N., and KOLLI, I. D., Scientific Physical-Chemical Research Institute Imeni L. Ya. Karpov and Moscow State University Imeni M. V. Lomonosov

"Study of the Phosphine Complexes With the III Group of Metal Halides and pπ Conjugation in Aromatic Phosphines"

Abstract: Heat effects of the formation reactions of aromatic and aliphatic phosphine complexes with boron trifluoride and trichloride aluminum bromide and gallium trichloride and the dipole moments were determined in benzene at 25°. Symbatic changes were observed of the degree of charge transfer and heats of the formation of donor-acceptor complex bonds in a series of aliphatic phosphine complexes. The polarity and complex stability change in the order $BF_3 < AlBr_3 \cong GaCl_3$. The π integrals of the overlap of C-N and C-P bonds in aromatic amines and phosphines have been calculated. It has been shown that the hybrid sp orbital of the free pair of electrons at the phosphorus atom is capable of real pπ overlap. The pπ energies of conjugation in the molecules of dipropylphenylphosphine, ethyldiphenylphosphine, and triphenylphosphine have been determined by the method of complex formation.

Polymers and Polymerization

UDC 542.955:546.27'161:547.1'118:678.643'42'5:678.043

USSR

SADYKOVA, E. M., CHELNOKOVA, Z. B., KOLLI, I. D., RODIONOV, R. A., and SPITSYN, VIKT. I., Moscow State University Imeni M. V. Lomonosov

"Addition Products of Boron Trifluoride With Phosphines as Reinforcement Agents for Epoxy Resins"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72, pp 786-790

Abstract: Addition complexes of boron trifluoride and phosphines: P-tri-n--butyl-B-trifluorophosphineboron (BPB), and P-triphenyl-B-trifluorophosphine-boron (PPB) were used as reinforcing agents for the epoxy resin ED-5. Optimal conditions for their use were as follows: 25 parts by weight of the complex per 100 of the resin, temperature -- 150°C, duration of the process -- 12 hrs. The products obtained showed excellent durability even at elevated tempera-tures, improved fire-retardant properties, and excellent light transmission. Infrared spectra of the products were studied and on their basis it was shown that the reactions involved in above processes go in two directions: reaction of the complex with the oxygen of the epoxide group leading to the formation of a phosphine ion which then acts as a stabilizer towards oxidative degrada-

1/2